

Anne Arundel County Special IDDE Site Visit Report

Location: The intersection of Deale Place and Park Place, Deale MD
Date: July 10, 2019
Investigators: M. Berlett and G. Rogers
Concern: Possible sewage source for bacteria in Rockhold Creek

Anne Arundel County staff requested a site visit to storm drain outfall Q34O002, at the intersection of Deale Place and Park Place, to gather information that may be used to identify a source of elevated bacteria levels in a nearby tidewater area of Rockhold Creek. The field team investigated the site at 12:43 p.m. on Wednesday, July 10, 2019. The most recent rainfall prior to the site visit had occurred on July 8, and the antecedent dry time was approximately 52 hours. The air temperature at the time of the site visit was 84 °F. On July 10, the team observed that the storm drain outfall was dry. The team investigated the inlets leading to the outfall and found standing water, which had a green tint (Figure 2), at inlet Q34C8I00003. The inlet drained a narrow ditch at the west edge of a residential lot (Figure 3). As the outfall did not exhibit flowing water, the team collected a sample of the standing water at the inlet to test for a suite of water quality parameters. The results of the chemical tests are shown in Table 1. Although the test results indicated measurable levels of some of the parameters, none of the concentrations were at or above the corresponding action level, as specified by Anne Arundel County's Illicit Discharge Detection and Elimination Standard Operating Procedures.

As a reminder, an illicit discharge is any discharge to a storm sewer system that is not composed entirely of stormwater, except for discharges allowed under an NPDES permit (e.g., footer drains, firefighting operations). Field teams consider the relative concentrations of the tested parameters as clues when they infer possible pollution sources for suspected illicit discharges. As an example, concentrations of chlorine and detergents higher than program action levels may be indicators of wastewater or graywater in effluent. High levels of ammonia may also indicate the degradation of organic material in runoff. Water temperatures above 75 °F could also contribute to the evidence of a possible wastewater influence on a stormwater pipe network. A detectable odor of sewage in the storm drain system discharge would be an obvious clue to the possible presence of sewage in the pipe system.

Referring to the field test results found in Table 1, the relatively high temperature of the sample likely reflected the exposure of the stagnant water to direct sunlight, and thus could not reliably be used as an indicator. The sample did not exhibit a detectable odor or color. The test results indicated measurable levels of the three analytes (chlorine, detergents, and ammonia), but none of the readings exceeded the program criteria that would indicate the potential for non-stormwater discharges. Thus, the field team did not document conclusive evidence to support an inference that the stormwater runoff through the network connected to outfall Q34O002 had been conveying sewage with its discharge.

The team investigated the conditions in the vicinity of the outfall and along the drainage path from the outfall to the waterway, Rockhold Creek. The team did not observe signs of solid waste or damage to the sanitary sewer network near the outfall. The ditch that conveyed the outfall drainage toward the creek discharged to an open parcel directly behind the lot on the southeast

side of the intersection of Deale Place and Park Place. The team documented that the discharge extent broadens when it reaches a larger and flatter floodplain downstream of the south end of the ditch (Figure 4). It is here that the team documented the presence of approximately 45 geese and the tracks of many geese in the mud associated with the discharge path. The team surmised that if the geese frequent this area, goose droppings may be concentrated near the cove of the creek which abuts the western boundary of the open lot. If so, stormwater discharge may transport bulk material and leachate from the droppings into the cove at this location. The accumulated feces may be contributing to the growth in the populations of bacteria in the creek. An area map is provided in Figure 5.



Figure 1. A view of the outfall Q34O002



Figure 2. A view of the standing water in the pipe of inlet Q34C8I00003



Figure 3. A view of the narrow ditch that drains toward inlet Q34C8I00003; the inlet headwall is seen in the foreground

Table 1. Chemical test results and corresponding action levels for parameters tested for the water sample collected from inlet Q34C8I00003		
	Action Level	Test Result
pH	≤ 6.5 or ≥ 8.5	7.05
Temperature (°F)		83.9
Ammonia (mg/L)	≥ 1	0.25
Total Chlorine (mg/L)	≥ 0.4	0.30
Detergents (mg/L)	≥ 0.5	0.1
Fluoride (mg/L)	≥ 0.75	0.0
Phenols (mg/L)	≥ 0.17	0.0
Copper (mg/L)	≥ 0.21	0.0



Figure 4. A view of the flat plain that receives and distributes the discharge from the outfall see in Figure 1 and the drainage ditch seen in Figure 2; Rockhold Creek is visible in the background of the photograph



Figure 5. Area map